

38. (New) An array according to claim 37, wherein each subpopulation further comprises a different identifier binding ligand.

39. (New) An array according to claim 37 or 38, further comprising at least one decoder binding ligand comprising a label.

40. (New) An array composition according to claim 37 wherein said bioactive agents are nucleic acids.

41. (New) An array composition according to claim 40 wherein said nucleic acids are DNA.

42. (New) An array composition according to claim 40 wherein said nucleic acids are single stranded nucleic acids.

43. (New) An array composition according to claim 40 wherein said nucleic acids are double stranded nucleic acids.

44. (New) An array composition according to claim 37 wherein said bioactive agents are proteins.

45. (New) An array composition according to claim 37 wherein said substrate is a fiber optic bundle.

46. (New) An array composition according to claim 37 wherein said substrate is glass.

47. (New) An array composition according to claim 37 wherein said substrate is plastic.

48. (New) An array composition according to claim 40, 41, 42, 43, 44, 45, 46 or 47, wherein each subpopulation further comprises a different identifier binding ligand.

49. (New) An array composition according to claim 48, further comprising at least one decoder binding ligand comprising a label.

50. (New) An array composition according to claim 49, wherein said label is a fluorophore.

51. (New) An array composition comprising:

a) a fiber optic substrate with a surface comprising wells at a density of at least 100 sites per 1 mm²; and

b) a population of microspheres randomly distributed in said wells, wherein said population comprises at least a first and a second subpopulation each comprising a different bioactive agent and do not comprise a label.

52. (New) An array composition comprising:

a) a substrate with a surface comprising discrete sites at a density of at least 100 sites per 1 mm²; and

b) a population of microspheres comprising at least a first and a second subpopulation, wherein said first and said second subpopulations each comprise:

i) a different protein bioactive agent; and

ii) a different nucleic acid identifier binding ligand;

wherein said microspheres are randomly distributed on said sites.

53. (New) An array composition according to claim 15 wherein said substrate is selected from the group consisting of fiber optic bundles, plastic and glass.

54. (New) An array composition comprising:

a) a fiber optic bundle with a surface comprising discrete wells at a density of at least 100 sites per 1 mm²; and

b) a population of microspheres comprising at least a first and a second subpopulation, wherein said first and said second subpopulations each comprise:

i) a different protein bioactive agent; and

ii) a different nucleic acid identifier binding ligand;

wherein said microspheres are randomly distributed on said sites.

55. (New) A method of making a composition comprising: